UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/054,525	01/22/2002	Vladimir Zabezhinsky	AMCC6000	5983

7590 08/07/2007	EXAMINER
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ART UNIT	PAPER NUMBER
2616	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
Office Action Summary	10/054,525	ZABEZHINSKY, VLADIMIR
	Examiner	Art Unit	
	Daniel J. Ryman	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>07 May 2007</u>.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>7,8,10,12-17 and 19-30</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>7,8,10,12-17 and 19-30</u> is/are rejected.

7) ☒ Claim(s) <u>7,8,10,12-17 and 19-30</u> is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1.   Applicant's arguments with respect to claims 7, 8, 10, 12-17, and 19-30 have been considered but are moot in view of the new ground(s) of rejection.

Claim Objections

2.   Claim 7 is objected to because of the following informalities: in line 9, "said frame alignment signal" should be "an instance of said frame alignment signal" to specify to which frame alignment signal of the plurality of frame alignment signals (each frame of the plurality of frames has a frame alignment signal) the phrase "said frame alignment signal" refers; in line 14, "said reference" should be "a reference" since "said reference location" refers to the reference location in the first one of the plurality of subframe structures, where the reference location in the second subframe structure is presumably different than the reference location in the first subframe structure; and in line 15, "said reference" should be "a reference" since "said reference position" refers to the reference position in a first one of the data frames, where the reference position in the second data frame is presumably different than the reference position in the first data frame. Appropriate correction is required.

3.   Claim 8 is objected to because of the following informalities: in line 1, "A method" should be "The method". Appropriate correction is required.

4.   Claim 10 is objected to because of the following informalities: in line 1, "A method" should be "The method"; and in line 3, "each of said plurality of data frames is represented by L bytes" should be "said plurality of bytes is L bytes" since a data frame is not "represented" by L bytes but rather contains L bytes. Appropriate correction is required.

5.   Claim 12 is objected to because of the following informalities: in line 1, "A method" should be "The method". Appropriate correction is required.

6.   Claim 13 is objected to because of the following informalities: in line 2, "input node" should be "input module" since a node is defined in the art to be a complete device, whereas the term in the claim only refers to a part of a device; in line 2, "each comprising" should be "each data frame comprising"; in line 3, "bits;;" should be "bits;"; in line 5, "each corresponding" should be "each subframe structure corresponding"; in line 8, "said frame alignment signal" should be "an instance of said frame alignment signal" to specify to which frame alignment signal of the plurality of frame alignment signals (each frame of the plurality of frames has a frame alignment signal) the phrase "said frame alignment signal" refers; in line 13, "said reference" should be "a reference" since "said reference location" refers to the reference location in the first one of the plurality of subframe structures, where the reference location in the second subframe structure is presumably different than the reference location in the first subframe structure; and in line 14, "said reference" should be "a reference" since "said reference position" refers to the reference position in a first one of the data frames, where the reference position in the second data frame is presumably different than the reference position in the first data frame. Appropriate correction is required.

7.   Claim 14 is objected to because of the following informalities: in line 1, "A data" should be "The data". Appropriate correction is required.

8.   Claim 15 is objected to because of the following informalities: in line 1, "A data" should be "The data". Appropriate correction is required.

9.   Claim 16 is objected to because of the following informalities: in line 2, "each comprising" should be "each data frame comprising"; in lines 5-6, "said frame alignment signal" should be "an instance of said frame alignment signal" to specify to which frame alignment signal of the plurality of frame alignment signals (each frame of the plurality of frames has a frame alignment signal) the phrase "said frame alignment signal" refers; in line 11, "said reference" should be "a reference" since "said reference location" refers to the reference location in the first one of the plurality of subframe structures, where the reference location in the second subframe structure is presumably different than the reference location in the first subframe structure; in line 12, "said reference" should be "a reference" since "said reference position" refers to the reference position in a first one of the data frames, where the reference position in the second data frame is presumably different than the reference position in the first data frame; and in line 14, "transmitting each of said plurality of subframe structures over one" should be "transmitting each of said plurality of subframe structures over a respective one" to clarify that only one subframe structure is transmitted over each data channel. Appropriate correction is required.

10.   Claim 17 is objected to because of the following informalities: in line 1, "A method" should be "The method". Appropriate correction is required.

11.   Claim 19 is objected to because of the following informalities: in line 1, "A method" should be "The method". Appropriate correction is required.

12.   Claim 20 is objected to because of the following informalities: in line 1, "A method" should be "The method". Appropriate correction is required.

13.   Claim 21 is objected to because of the following informalities: in line 1, "A method" should be "The method". Appropriate correction is required.

14.   Claim 22 is objected to because of the following informalities: in line 1, "A method" should be "The method". Appropriate correction is required.

15.   Claim 23 is objected to because of the following informalities: in line 2, "input node" should be "input module" since a node is defined in the art to be a complete device, whereas the term in the claim only refers to a part of a device; in line 9, "said reference" should be "a reference" since "said reference location" refers to the reference location in the first one of the plurality of subframe structures, where the reference location in the second subframe structure is presumably different than the reference location in the first subframe structure; and in line 10, "said reference" should be "a reference" since "said reference position" refers to the reference position in a first one of the data frames, where the reference position in the second data frame is presumably different than the reference position in the first data frame. Appropriate correction is required.

16.   Claim 24 is objected to because of the following informalities: in line 1, "An apparatus" should be "The apparatus". Appropriate correction is required.

17.   Claim 25 is objected to because of the following informalities: in line 1, "An apparatus" should be "The apparatus". Appropriate correction is required.

18.   Claim 26 is objected to because of the following informalities: in line 9, "said reference" should be "a reference" since "said reference location" refers to the reference location in the first one of the plurality of subframe structures, where the reference location in the second subframe structure is presumably different than the reference location in the first subframe structure; and in

line 10, "said reference" should be "a reference" since "said reference position" refers to the

reference position in a first one of the data frames, where the reference position in the second

data frame is presumably different than the reference position in the first data frame.

Appropriate correction is required.

19.   Claim 27 is objected to because of the following informalities: in line 1, "A method"

should be "The method". Appropriate correction is required.

20.   Claim 28 is objected to because of the following informalities: in line 1, "A method"

should be "The method". Appropriate correction is required.

21.   Claim 29 is objected to because of the following informalities: in line 1, "A method"

should be "The method". Appropriate correction is required.

22.   Claim 30 is objected to because of the following informalities: in line 1, "A method"

should be "The method". Appropriate correction is required.

Claim Rejections - 35 USC § 112

23.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the
> subject matter which the applicant regards as his invention.

24.   Claims 7, 8, 10, 12-17, and 19-30 are rejected under 35 U.S.C. 112, second paragraph, as

being indefinite for failing to particularly point out and distinctly claim the subject matter which

applicant regards as the invention.

25.   Each of claims 7, 13, 16, 23, and 26 recite the following limitation (or a variation

thereof): "[a] frame alignment signal [which] is periodically distributed within each of said

plurality of subframe structures by: assigning a first instance of said frame alignment signal to a

reference location in a first one of said plurality of subframe structures . . . and assigning a

second instance of said frame alignment signal to said reference location in a second one of said

plurality of subframe structures". It is unclear whether the phrase "plurality of subframe

structures" is limited to only two subframe structures. Webster's Collegiate Dictionary defines

the term "plurality" as "a large number or quantity". In the claims, the distribution of frame

alignment signals within *each of the plurality* of subframe structures is accomplished by only

assigning instances of the frame alignment signal in *two* subframe structures. As such, Applicant

seemingly allows for a large number of subframe structures by using the term "plurality";

however, Applicant only specifies two subframe structures. As such, it is unclear whether these

claims permit a large number or only two subframe structures. Applicant should amend the

claims to either (1) limit the number of subframe structures to only two by changing the term

"plurality", or (2) elaborate on how the remaining "plurality" of subframe structures are assigned

frame alignment signals.

26.   In addition, claims 23 and 26 disclose a device receiving a plurality of subframe

structures from a plurality of channels, where "a frame alignment signal [is] periodically

distributed within each subframe structure by: assigning a first instance . . . in a first one of said

plurality of subframe structures . . . and assigning a second instance . . . in a second one of said

plurality of subframe structures". It is unclear from the claims at what point the assigning steps

are performed. Simply, the assigning steps are phrased in a manner that suggests the steps are

part of a method being performed. Given that these steps are recited in claims directed to the

device receiving the subframe structures, it is seemingly suggested that the receiving device

would perform the steps. However, the subframe structures that the receiving device receives

already have the frame alignment signals distributed within them, such that the receiving device

cannot perform the assigning steps. As such, Examiner suggests that Applicant amend the claims to include steps or means for interleaving the received signals in the receiver to obtain the original data signals. For example, Applicant could amend claim 23 as follows: "a rotating interleaver configured to distribute data from said plurality of subframe structures into a data frame; the rotating interleaver including means for identifying frame alignment signals in the subframe structures and using these frame alignment signals to align the received frames; means for identifying in a first one of the plurality of subframe structures the frame alignment signal and using the position of this first frame alignment signal to identify a reference position in a first one of the data frames . . ."

Allowable Subject Matter

27.   Claims 7, 8, 10, 12, 13-17, and 19-22 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action. The prior art does not disclose or fairly suggest periodically distributing within each of a plurality of subframe structures a frame alignment signal by assigning the frame alignment signals to reference locations in the subframe structures, where the data frames used to create the subframe structures contain the frame alignment signals. Bleickardt et al. (USPN 5,461,622) teaches creating subframe structures through a deinterleaving process (col. 5, lines 38-42) and periodically distributing within each of the subframe structures a frame alignment signal by assigning the frame alignment signals to reference locations in the subframe structures (col. 5, lines 49-54, where frame reference bytes are inserted into particular locations of the byte streams in the three rails, i.e. the subframe structures). However, Bleickardt does not teach that the data frames used to create the subframe structures contain the frame alignment signals (col. 5, lines

49-54, where frame reference bytes are inserted into the subframe structures, such that the frame reference bytes are not part of the incoming data frames). Similarly Black et al. (USPN 5,351,239), of record as having been cited in the PTO-892 form mailed 1/25/2006, teaches rotationally distributing frame alignment signals in "subframe structures" (col. 2, lines 15-37, where overhead signals, i.e. frame alignment signals, are rotationally distributed in the channels, i.e. subframe structures, see also col. 2, line 55-col. 3, line 5). However, Black does not teach that the data frames used to create the subframe structures contain the frame alignment signals (col. 2, lines 30-37, where the overhead signals are inserted into the channels).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel J. Ryman whose telephone number is (571)272-3152. The examiner can normally be reached on Mon.-Fri. 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571)272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

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like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Daniel J. Ryman
Examiner
Art Unit 2616